



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/531,066 | 04/12/2005 | Yuji Abe | 064446-0014 | 2542 |
| 20277 | 7590 | 09/22/2006 | EXAMINER | |
| MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096 | | | ANDERSON, GUY G | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2883 | |

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/531,066 | ABE ET AL. | |
| | Examiner Guy G. Anderson | Art Unit 2883 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 18 July 2006.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 5-11 and 17-19 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 5-11 and 17-19 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 12 April 2005 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>12 April 2005</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION***Response to Arguments***

- 1.1 Applicant has cancelled Claims 1-4 and amended Claims 5-11 and has overcome the basis for examiners original objection on the grounds that the claim preamble indicated that the claim was for a method pf producing optical fiber while in actuality the claim body was directed towards a method of cleaning optical fiber. Accordingly, examiner withdraws the original objection to claims 1-11.
- 1.2 Applicant argues that the amendments to the claims negate the use of Schotter and Furukawa as references against applicant. Examiner agrees that the amendments currently offered now preclude the use of Schotter as a rejection under 35 U.S.C. 102(b) and that rejection is hereby withdrawn.
However, examiner feels that the amendments as currently offered do not preclude the use of Furukawa for the reasons listed below in Response to Arguments section.

Response to Amendment***Claim Rejections - 35 USC § 103***

- 2.1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 2.2 **Claims 5-11 and 17-19 are rejected** under 35 U.S.C. 103(a) as being unpatentable over JP 10-029837 to Furukawa Electric Co.
Regarding Claim 5, Furukawa specifically discloses a method of cleaning optical fiber comprising/wherein:
 - 5a) disposing a cleaning member on an optical fiber moving path, wherein the cleaning member is a mesh member of a soft and flexible fiber sheet formed by knitting fiber threads and bringing a surface of the moving optical fiber into a

physical contact with the cleaning member for cleaning the surface of the moving optical fiber and inserting the optical fiber into an interstice of the fiber sheet.

[Fig. 1-5, Paragraph 27.]

Furukawa does not specifically disclose a method wherein:

5b) the fiber sheet satisfies the relation $F \geq 0.01$ mm and $G \leq 0.8 \times D$ in which D denotes the outer diameter of the optical fiber, G denotes the mesh size of the fiber thread and F denotes the diameter of the fiber threads.

However, Furukawa does specifically disclose that the mesh size can be varied depending upon needs and type of material used [Paragraph 27]. Additionally, it would have been an obvious matter of design choice to vary the size of the mesh opening depending upon the size of the optical fiber to be cleaned. It has been held that when a modification would involve merely a change in the size of a component, then such a change in size is generally recognized as being within the level of ordinary skill in the art, *In re Rose, 105 USPQ 237 (CCPA 1955)*.

Regarding Claim 6: Furukawa discloses or makes obvious all of the limitations of the base claims upon which Claim 6 depends.

Furukawa does not specifically disclose a cleaning device:

6) wherein a plurality of fiber sheets are laminated in a moving direction of the optical fiber.

However, Furukawa does specifically disclose that a number of mesh sheets may be placed within the moving direction of the optical fiber [Fig. 4, 5, Paragraph 28, 29] and only omits the element of lamination. Since the combination of elements performs the same function with or without lamination, it would have been obvious to one of ordinary skill in the art at the time the invention was made to laminate the sheets, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art, *In re Karlson, 136 USPQ 184*.

Regarding Claim 7: Furukawa discloses or makes obvious all of the limitations of the base claims upon which Claim 7 depends.

Furukawa does not specifically teach:

7) a relationship wherein the number of fiber sheets are preset to meet the relation

“ $L = 54*T - 3.4$ ” in which L denotes the length of the optical fiber to be cleaned and T denotes the thickness of the fiber sheets.

However, Furukawa does disclose that the number of sheets can be chosen depending upon the application [See Paragraph 28] and therefore it would have been an obvious matter of design choice to vary the thickness of the fiber sheets depending upon the length of the optical fiber to be cleaned. It has been held that when a modification would involve merely a change in the size of a component, then such a change in size is generally recognized as being within the level of ordinary skill in the art, *In re Rose, 105 USPQ 237 (CCPA 1955)*.

Regarding Claim 8: Furukawa discloses or makes obvious all of the limitations of the base claims upon which Claim 8 depends.

Furukawa does not specifically teach:

- 8) the use of an electrically grounded cleaning member.

However, Furukawa does disclose that the problem to be solved and the reason for cleaning the optical fibers is that during the process of rolling and unrolling optical fiber from storage rolls, a build up of static electricity occurs which is the main causation of dust particles being attracted to and adhering on the optical fiber [Paragraphs 6-11]. It is well known and understood in the art that providing electrical grounds for the cleaning members used in cleaning optical fibers and components is necessary in order to dissipate or bleed accumulated static charges to ground. [See Loder and Shoemaker, US-6854152 and Clatanoff and Cox, US-6863080.]

Regarding Claim 9: Furukawa discloses or makes obvious all of the limitations of the base claims upon which Claim 9 depends.

Furukawa specifically discloses a method of cleaning optical fiber:

- 9) wherein the optical fiber is passed through the cleaning member prior to detection of uneven spots on the optical fiber [Fig. 2, Paragraph 23.]

Regarding Claim 10: Furukawa discloses or makes obvious all of the limitations of the base claims upon which Claim 10 depends.

Furukawa specifically discloses a method of cleaning optical fiber:

- 10) wherein the optical fiber is passed through the cleaning member prior to coloring of the optical fiber [Fig. 2, Paragraph 1.]

Regarding Claim 11, Furukawa discloses or makes obvious all of the limitations of the base claims upon which Claim 11 depends.

Furukawa does not specifically disclose:

- 11) a method of cleaning the optical fiber wherein the fiber is cleaned, taken up on a storage reel, and then subjected to a coloring process.

However, Furukawa does specifically disclose performing the cleaning steps prior to application of any resin or coloring coatings (Fig. 1, Paragraph 13). Since performing the coating process after taking up the cleaned fiber onto a storage reel essentially amounts to a rearrangement of parts or steps in the process, it would have been obvious to one of ordinary skill in the art at the time the invention was made that storage of the fiber on a reel could be an intermediate step subsequent to the cleaning and prior to the coating process since it has been held that rearranging parts of an invention involves only routine skill in the art, *In re Japikse, 86 USPQ 70*.

Regarding Claim 17, Furukawa specifically discloses a method of cleaning optical fiber comprising/wherein:

- 17a) a cleaning member disposed on an optical fiber longitudinal moving path for physical contact with a surface of a moving optical fiber for cleaning the surface thereof.

Furukawa does not specifically disclose:

- 17b) means for holding the cleaning member so that a contact portion of the cleaning member is movable in a direction perpendicular to the longitudinal moving path by the movement of the optical fiber.

However, Furukawa suggests that making the attachment component of the porous cleaning member movable can prevent abnormalities in tension due to the position of the moving fiber deviating from its intended path. [Paragraph 31.]

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have made the cleaning member movable with respect to the direction of fiber movement so that the mesh member would continue to make contact with the fiber if the tension in the fiber caused it to change location with respect to the cleaning member.

Regarding Claim 18, Furukawa discloses or makes obvious all of the limitations of the base claims upon which Claim 18 depends.

Furukawa does not specifically disclose a cleaning device:

18) wherein the cleaning member is elongated due to friction between the cleaning member and the optical fiber so that the contact portion of the cleaning member and the optical fiber is are movable in a moving direction of the optical fiber.

However, Furukawa does specifically disclose a cleaning member made of materials that have elastic properties [Paragraph 17]. It would have been obvious to one of ordinary skill in that art at the time the invention was made that an elastic porous or mesh material will elongate at the intersection of an optical fiber and the material if there is a frictional contact between the respective surfaces and the fiber is being pulled through the elastic material since this is a well known property of such materials.

Regarding Claim 19, Furukawa discloses or makes obvious all of the limitations of the base claims upon which Claim 19 depends.

Furukawa does not specifically disclose a cleaning device:

19) wherein the cleaning member is held to provide sufficient slack in the cleaning member that the contact portion which is in a contact with the optical fiber is movable in the longitudinal direction and radial direction of the optical fiber due to the movement of the optical fiber.

However, Furukawa does teach the use of a cleaning member made of materials that have elastic properties [Paragraph 17]. It would have been obvious to one of ordinary skill in that art at the time the invention was made that an elastic porous or mesh material will be moveable in a radial direction of the optical fiber at the intersection of a moving optical fiber and the material if there is a frictional contact between the respective surfaces due to the varying axial and radial stresses and strains on the optical fiber from being pulled under tension through the elastic material since this is a well known property of such materials.

Conclusion

3.1 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

| Patent Number | Name | Relevancy |
|---------------|---------------|--|
| JP 11-281860 | Yazaki | Cleaning optical fiber |
| JP-08-194141 | Furukawa | Cleaning optical fiber |
| US-6485193 | Chandraiah | Cleaning optical fiber |
| US-5056185 | Schotter | Cleaning optical fiber |
| US-4978413 | Schotter | Cleaning and adhesive applicator for optical fiber |
| US-6466723 | Miyake et al. | Cleaning optical fiber |
| US-6681437 | Miyake et al. | Cleaning optical fiber |

3.2 Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).
Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

3.3 A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

3.4 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy G. Anderson whose telephone number is 571.272.8045. The examiner can normally be reached on M-Th 1130-2200.

3.5 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

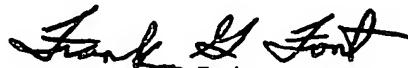
Art Unit: 2883

3.6 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

3.7 Date and signature of assistant examiner.



September 3, 2006



Frank G. Font
Supervisory Patent Examiner
Technology Center 2800